CLAIMS

1. A wireless communication system made up of a plurality of devices, comprising:

a first device which, upon transmitting a physical layer frame including an upper layer frame relative to an upper layer above a physical layer, indicates a length of said upper layer frame in a header of said physical layer frame and a destination of said upper layer frame in a header of said upper layer frame; and

a second device which, after determining upon receipt of said header of said upper layer frame that said second device is not the destination of the frame, goes into a sleep state for a predetermined time period in accordance with said length of said upper layer frame extracted from said header of said physical layer frame.

2. A terminal which receives a physical layer frame including an upper layer frame relative to an upper layer above a physical layer and which has power-saving mode involving operations more energy-efficient than normal operations, comprising:

power-saving operation time calculating means for calculating a power-saving operation time in accordance with a length of said upper layer frame extracted from a header of said physical layer frame;

address detecting means which, after detecting a destination address from a header of said upper layer frame upon receipt thereof and determining that said upper layer frame is not destined for said terminal, gives an instruction for transition into said power-saving mode starting from the beginning of a body of said upper layer frame; and

means which, upon elapse of said power-saving operation time calculated in response to said instruction for transition into said power-saving mode, gives an instruction to cancel said power-saving mode.

3. The terminal according to claim 2, wherein said power-saving operation time calculating means calculates as said power-saving operation time a time which is longer than a first time corresponding to said length of said upper layer frame minus the length of said header of said upper layer frame and which is less than a second time corresponding to said first time supplemented with a maximum frame interval.

4. The terminal according to claim 2, wherein said power-saving operation time calculating means calculates as said power-saving operation time a time obtained by adding a maximum frame interval to said length of said upper layer frame minus the length of said header of said

upper layer frame.

5. The terminal according to claim 2, further comprising inhibiting means for inhibiting the transition into said power-saving mode regardless of said instruction given by said address detecting means if information derived from said physical layer frame fails to comply with a predetermined condition.

6. The terminal according to claim 5, wherein said inhibiting means includes means for inhibiting the transition into said power-saving mode if a predetermined error is detected in a preamble of said physical layer frame.

7. The terminal according to claim 5, wherein said inhibiting means includes means for inhibiting the transition into said power-saving mode if a predetermined error is detected in said header of said physical layer frame.

8. The terminal according to claim 5, wherein said inhibiting means includes means for inhibiting the transition into said power-saving mode if a value out of a prescribed range is detected in said header of said physical layer frame.

9. The terminal according to claim 5, wherein said inhibiting means includes means for inhibiting the

transition into said power-saving mode if said power-saving operation time calculated by said power-saving operation time calculating means is shorter than a predetermined time.

10. A processing method for use with a terminal which has power-saving mode involving operations more energy-efficient than normal operations, said processing method comprising the steps of:

starting to receive a physical layer frame including an upper layer frame relative to an upper layer above a physical layer;

calculating a power-saving operation time in accordance with a length of said upper layer frame extracted from a header of said physical layer frame;

after detecting a destination address from a header of said upper layer frame upon receipt thereof and determining that said upper layer frame is not destined for said terminal, giving an instruction for transition into said power-saving mode starting from the beginning of a body of said upper layer frame; and

upon elapse of said power-saving operation time calculated in response to said instruction for transition into said power-saving mode, giving an instruction to cancel said power-saving mode.

11. The processing method according to claim 10, further comprising the step of inhibiting the transition into said power-saving mode regardless of said instruction if information derived from said physical layer frame fails to comply with a predetermined condition.

12. A program for causing a terminal having power-saving mode involving operations more energy-efficient than normal operations to carry out a procedure, said program comprising the steps of:

starting to receive a physical layer frame including an upper layer frame relative to an upper layer above a physical layer;

calculating a power-saving operation time in accordance with a length of said upper layer frame extracted from a header of said physical layer frame;

after detecting a destination address from a header of said upper layer frame upon receipt thereof and determining that said upper layer frame is not destined for said terminal, giving an instruction for transition into said power-saving mode starting from the beginning of a body of said upper layer frame; and

upon elapse of said power-saving operation time calculated in response to said instruction for transition

into said power-saving mode, giving an instruction to cancel said power-saving mode.

13. The program according to claim 12, wherein said procedure further comprises the step of inhibiting the transition into said power-saving mode regardless of said instruction if information derived from said physical layer frame fails to comply with a predetermined condition.

14. A storage medium which stores a program in a manner readable by a computer for execution, said program causing a terminal having power-saving mode involving operations more energy-efficient than normal operations to carry out a procedure comprising the steps of:

starting to receive a physical layer frame including an upper layer frame relative to an upper layer above a physical layer;

calculating a power-saving operation time in accordance with a length of said upper layer frame extracted from a header of said physical layer frame;

after detecting a destination address from a header of said upper layer frame upon receipt thereof and determining that said upper layer frame is not destined for said terminal, giving an instruction for transition into said power-saving mode starting from the beginning

of a body of said upper layer frame; and

upon elapse of said power-saving operation time calculated in response to said instruction for transition into said power-saving mode, giving an instruction to cancel said power-saving mode.

15. The storage medium according to claim 14, wherein said procedure further comprises the step of inhibiting the transition into said power-saving mode regardless of said instruction if information derived from said physical layer frame fails to comply with a predetermined condition.